

## PROBLEM DOMAIN TRANSFORMATION OF SCIENCE AND PHILOSOPHY

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### **ABSTRACT**

*I argue that the transformation of the problem domain will inevitably lead to the theoretical breakthrough and transition of philosophy and science. Democritus' philosophy of atomism had induced a change of the scientific problem domain. The mechanistic view of nature in modern science has resulted in a philosophical problem domain. From the perspective of quantum mechanics, some synthesis of Democritus' atomism and Leibniz's monadism may avoid their respective shortcomings, thus exerting a far-reaching influence on advancing the study of matter and consciousness. It is shown that a certain cross-shaped pattern constitutes a complete understanding paradigm of the universe life, so that science and philosophy in the novel paradigm can reflect and complement each other.*

**KEYWORDS:** *Problem Domain, Science and Philosophy, Paradigm*

### **INTRODUCTION**

Democritus of ancient Greece puts forward the theory of the atom, believing that the origin of all things in the cosmos is atoms and void. The atom, which is impenetrable particles of matter and cannot be perceived by the senses, are infinite in number and various in size, shape, position, and order. The interior of an atom having no internal gaps is substantial and solid. Atoms move and collide in the void space to form everything and "countless worlds". The number of worlds is infinite, the size of the worlds varies, and the time of generation and destruction of the worlds varies. Democritus also explores the essence and composition of the soul based on his atomic theory. He believes that the soul is composed of fine spherical atoms, a kind of fire or heat atoms, which could penetrate everything, move and make other things move. The atom group that makeup things are constantly projecting images of things. They act on human senses and hearts, thus producing human feelings and thoughts. If the atoms that make up the soul are dispersed, life will perish and the soul will disappear (see Russell 1945:64-66). By the seventeenth century, Democritus' philosophy of atomism had induced a thinking about the domain of scientific problem (The problem domain that I understand is the scope of legitimacy governed by certain research tradition or paradigm): How to establish basic theories of physics and chemistry on the basis of atomism? The transformation of the problem domain gave birth to the great Newtonian mechanics and Dalton's theory of chemical atomism.

The mechanistic view of nature in modern science, however, has aroused some philosophers' worries, resulting in a philosophical problem domain. First, scientists study only one world, the world we can observe, and the notion of "countless worlds" is discarded. Second, nature is seen as a machine-like device, a passive, rigid system subject to physical and chemical laws. Third, it is difficult to explain the phenomenon of consciousness, explain how visible objects form invisible consciousness. Leibniz suggests explaining things from a qualitative and dynamic point of view instead of from

an extension or a quantitative point of view. He puts forward the theory of monads. Monads, which are the basis of all things, are an objective and simple spiritual entity, and thus has such characteristics as miscellaneous, bodiless, eternal, mutual independence and distinction in quality, and self-caused. Simple means that there is no part and is therefore inseparable; miscellaneous refers to infinite; eternal means that it will not be broken down and destroyed like natural things; mutual independence means that nothing can enter the interior of a monad and cause its change; qualitative distinction means that the perceptual clarity of each monad is different, resulting in the infinite classification of monads; self-cause means the change and development of a monad are not from the outside, but from the inside, thus becoming the internal “centers of force” different from the external mechanical forces (see Rescher 1991:40).

Leibniz develops Democritus’s “countless worlds” into “possible worlds” and imagines that there are countless possible worlds beyond the real world (our observable world). There is no causal relationship between the monads forming the world, but a pre-established harmonious relationship. There are different levels of the world, and the real world is the best of all possible worlds. Under static conditions, the monads follow the continuity principle. All the monads form an infinite continuous sequence from the highest level of “God” to the concrete person, and then to the lowest level of “primitive entities.” Under the dynamic conditions, it is “pre-established harmony” that determines that the change and development of an infinite number of monads are in harmony, ensuring the continuity of universe and the harmony of body and mind of human being. Leibniz’s theory of monads supports the notion of gifts because the monad itself has “micro-perception”, all thoughts and actions of the soul do not come from the feeling, but from its own interior (see Strickland 2014:14-161).

The development of modern quantum mechanics forces scientists to transform the scientific problem domain into the philosophical problem domain: what are the essential differences between matter and consciousness, between body and mind? How can we understand quantum phenomena? Since the 1920s, scientists have been puzzled about quantum measurement and entanglement. In the famous experiment of single electron double slit interference, scientists see that single electron interferes when passing through two slits. According to classical mechanics, it is impossible for an electron to interfere through two slits simultaneously. When scientists try to determine which slit an electron actually passes through, they always find that the electron can only pass through one slit at a time, which seems to indicate that the observer’s behavior changes the behavior of the electron. For this anomaly, physicist Bohr puts forward the famous “Copenhagen explanation”: when the observation occurs, the electron has the probability of existence in the position of both slits, but once the electron is measured and found to be in the position of one slit, it can not be located in the position of the other, that is, the wave function of the electron “collapse” to a certain position at the moment of measurement. Since then, Bohr has introduced observers and consciousness into quantum mechanics. Copenhagen explanation has been questioned. In order to get rid of “consciousness” in scientific theory, physicist Everett proposes a many-world explanation: an electron traverses a double slit and appears in two superimposed worlds. In one world, the electron traverses the left slit, and in the other, the electron traverses the right slit. Measurers in one world find the electron passing through the left slit, while those in the other world find the electron passing through the right slit. The two worlds are independent and parallel in evolution. The assumption that all parallel worlds are the same as our own is shocking but too bizarre to be accepted by all scientists. But over the past twenty years, more evidence has supported the many-worlds idea. Scientists studying the cosmic microwave background radiation signal found a huge “cold spot”, which is “empty” and there is no radiation signal. Scientists speculate that this strange space-time may be an evidence of the existence of another

universe. Some scientists believe that although many worlds evolve relatively independently, it is not without any association. However, what kind of consequences and modalities this connection brings about need to be studied in depth, which also poses a new challenge to philosophy.

Democritus's atom is passive, rigid and lifeless. Leibniz's monad compensates for the defect of the atom, but he puts the heterogeneous objects such as monad, matter, and God in the same series of philosophical depiction, just as putting the natural person and robot in the same social sequence, making a mistake of heterogeneous identity. From the perspective of quantum mechanics, some synthesis of Democritus' atomism and Leibniz's monadism may avoid their respective shortcomings, thus exerting a far-reaching influence on advancing the study of matter and consciousness. Imagine "nouser" as an unobservable common basis of matter and consciousness, which is a kind of being with no size, shape, quality, and position. All universal nousors are the same, carrying "natural light" or "wisdom" and having the ability to record, store, and transmit external information. Universal nousors induce the most basic and indivisible particles of matter, which have size, shape, mass, and location. Their movement and collision constitute the diversity, complexity, and hierarchy of the material world. The release of inner information of universal nousor determines the continuity, integrity, and order of the material world. Countless universal nousors pervade matter, and when they record the movement of matter in the form of unit information, they form special nousors that can store, transmit and release information. Consciousness is a flow of special nousor. Its material condition is to form a special nousor flow loop. The more complex the loop is, and the stronger the special nousor flow is, the more complex the consciousness is. Otherwise, the simpler the consciousness is, even to the extent that no consciousness phenomenon occurs (see Ma 2017: esp. Section 2.).

All parallel worlds and everything on it has their real and similar counterparts. They have been evolving independently but entangling and producing some kind of connection. Any individual in any world has only one counterpart in every other world. David Lewis believes that the cross-world identity of counterparts is determined by the similarity between counterparts (see Lewis 1968), but I think it is the information exchange between counterparts through special nousors determines the cross-world identity of counterparts. The "I" of this world only exchanges information with "I" in other worlds. The "I" of this world is only a fragment of a whole self, which has a complex structure, including the external, internal and discrimination areas. The in-self and ex-self areas are composed of sensation, memory, display, operation, processing, and body respectively. Different from that of ex-self, the information of the in-self sensory area comes from the counterparts. In waking state, the special flow of the ex-self area is more active, while in the dormant or silent state, the special flow of the in-self area is more active. The differences in the flow paths of special nousors in self-structure form various consciousness phenomena, such as memories, dreams, sleepwalking and déjà vu. Déjà vu means the feeling that you have previously experienced something which is happening to you at a certain moment. When a special nousor with information in the ex-self area meets another special nousor carrying the same information from the in-self area in the discrimination area, Déjà vu phenomenon may produce immediately. When the body is asleep, the valve in the ex-self area closes, special nousors coming from the counterparts may flow to the in-memory area after entering the discrimination area, and release the information in the in-display area, then dream occurs. When the same information of many counterparts enters the in-display area and breaks through the valve of the in-operation area, sleepwalking occurs. The dream of "I" in this world can not form an observation of the world, thus causing the wave function to "collapse", but the dream is a real consciousness activity, so it can only be understood as the release of the information from my counterparts(see Ma 2017: esp. Section 3.).

The parallel world follows five universal life laws, namely, the corresponding law, the limited law, the law of difference, the law of convergence, the law of love and hate. The law of correspondence states that there can only be one counterpart in each other's world; the law of limitation stipulates that the number of parallel worlds and "I" is not infinite; the law of difference stipulates that different worlds are not exactly the same, but maintain a certain tension; and the law of convergence stipulates that choice and situation of "I" in different worlds tend to be the same; the law of love and hate specifies the state in which the fragments of a whole person are united as a spiritual entity after death, representing the ultimate value of life (see Ma 2018: esp. Section 3.).

The counterpart theory leads us to different inferences and understanding of the problem's cognition and solution. For example, gender correspondence enables us to understand that transsexuals' feelings are caused by gender confusion and the convergence of different selves, and therefore this group should be understood and respected. Blood correspondence enables us to understand the importance of the health and longevity of a couple's children in consolidate or dissolving their marital relationship. The disappearance of correspondence indicates that a person's counterpart will no longer have a dream, sleepwalking, or déjà vu, and therefore there may be the dreamless person. Thinking convergence supports a complete technical record of dreams, and if a rigorous paper can be documented, our research will yield twice the result with half the effort. Event convergence gives us reason to believe that dreams have predictive and warning functions. For example, if a large number of people in the same area dream of an earthquake in a very short period of time, the probability of the earthquake occurring there will be greatly increased, so it is necessary to build a dream data bank. The convergence of abilities enables us to understand why a person suddenly has some untrained ability, such as martial arts, painting, etc. Behavioral convergence suggests that sleepwalking can be treated by differentiated adjustment.

The soul transmigration keeps the memory of individual life in the real world in a vertical and secret way and makes matter and consciousness obey the law of cause and effect as well. The replication and perfection of the soul make the different life produced by the freedom of will be placed in an eternal spiritual pattern horizontally, which makes the fragments of self tend to be complete, and obey the law of love and hate. This cross-shaped pattern constitutes a complete understanding paradigm of the universe life so that science and philosophy in this paradigm can reflect and complement each other.

Every change of the problem domain of philosophy and science will inevitably lead to the theoretical breakthrough and transition of philosophy and science itself, bringing a richer and more profound novel theoretical paradigm. The discovery of the problem domain will induce the sudden change of the direction and mode of thinking, and give birth to a richer and deeper theoretical paradigm. Philosophy governs and guides the development of science in the generation, solution, and transformation of the problem domain, while science urges the creation of new philosophy.

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